

Application Serial No.: 09/890,765
Request For Reconsideration filed on January 26, 2004
Reply to Office Action dated September 24, 2003

REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 7-11 are presently active in this case.

In the outstanding Official Action, Claims 7-11 were rejected under 35 U.S.C. 102(b) as being anticipated by Mossi et al. (U.S. Patent No. 6,032,979). For the reasons discussed below, the Applicants traverse the anticipation rejection.

The present invention relates to a gas generator wherein flames of eccentric squibs are controlled to spout around an axis of a housing. This is clearly shown by the description on page 41, line 25, through page 43, line 11, of the specification. Claim 7 of the present application recites a gas generator configured such that flames of the eccentric squibs are controlled to spout around the axis of the housing. Claim 8 of the present application recites a gas generator configured such that firing flames of respective eccentric squibs are controlled to spout around the axis of the housing. The Applicants respectfully submit that such configurations are not disclosed in the cited references.

The present advantageously recites a structure that accomplishes the effect that flames of the eccentric squibs are controlled to spout around the axis of the housing, thus it is possible to start combustion to the gas generating agent in the vicinity of the eccentric squibs and in a large area around the axis of the housing, so that it is possible to instantaneously shift the combustion to overall combustion. The feature that "flames of the eccentric squibs are controlled to spout around the axis of the housing" means that the flames generated from the

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eccentric squibs are controlled to spout around the axis of the housing without distinction directly or indirectly.

In the Mossi et al. reference, there is neither disclosure nor suggestion for the structure and effect of the present invention and accordingly, the Applicants respectfully submit that the present invention is novel and non-obvious.

Section 2 of the Official Action indicates that "flames of the eccentric squibs (62, 90) are controlled to spout around the axis of the housing (12); wherein the squibs (62, 90) are covered with firing lids (56, 96) formed with a plurality of firing holes (76, 104)." However, in the Mossi et al. reference, there is no description meaning "flames of the eccentric squibs (62, 90) are controlled to spout around the axis of the housing (12)." Namely, as clearly stated at the column 4, lines 43-59, of the Mossi et al. reference, the flame of the squib (62) passes the exit orifices (76) existing at the firing lids (56)(firing cap 56) through the igniter material (60) and fires the gas generant material (36). These exit orifices (76) are disposed in the sidewall (72) at a regular interval. In addition, as can be seen in FIG. 3, there are exit orifices (76) in the direction other than the axis of the housing (12). Moreover, in FIGS. 1-3, there is neither equipment for changing the direction of the flame of the eccentric squib (63) passing through the exit orifices (76) existing in the direction other than the axis of the housing (12) to the direction of the axis of the housing (12) nor description regarding such a feature in the specification of the Mossi et al. reference. Therefore, the firing lids (56) in FIGS. 1-3 do not have a function for controlling the flame of the squib (90) to the direction of the axis of the housing.

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In addition, as can be seen in FIG. 1, the squib (90) is disposed so as to contact with the gas generant material (86). The flame generated from the squib (90) fires the gas generant material (86) directly. In FIGS. 1-3, there is neither equipment for changing the direction of the flame of squib (90) to the direction of the axis of the housing nor description regarding such a feature in the specification of the Mossi et al. reference. Further, as clearly stated at column 6, lines 46-55, of the Mossi et al. reference, feature (104) in FIGS. 1-3 are the orifices to permit passage of the gas generated from the gas generant material (86) and are not the orifices to permit passage of the flame of the squib (90). Therefore, the firing lids (96) in FIGS. 1-3 do not have a function for controlling the flame of the squib (90) to the direction of the axis of the housing.

As thus described, since there is neither equipment for changing the direction of the flame of the eccentric squibs (62, 90) to the direction of the axis of the housing (12) nor description about such a feature in the specification of the Mossi et al. reference, it can be recognized that flames of the eccentric squib (62) are not controlled to spout around the axis of the housing (12). Therefore, there is neither disclosure nor suggestion for the structure and effect of the present invention and accordingly, the Applicants respectfully submit that the present invention is novel and non-obvious.

Furthermore, Section 2 of Official Action indicates that "a gas generating agent (36, 86, 60) for generating a high temperature gas when it burns is loaded in each of the combustion chambers..." and recognizes that feature (60) in FIG. 1 is "a gas generating agent for generating a high temperature gas when it burns" which is similar to 36 and 86.

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However, the squib is provided to fire the gas generant material by the flame generated therefrom. On the other hand, feature (60) in FIG. 1 is the enhancer for conducting the flame generated from the squib to the gas generant material and it has different function from the gas generant material. Therefore, in the Mossi et al. reference feature (60) in FIG. 1 is not called the gas generant material, but rather is called an igniter material. (See column 4, line 25, of the Mossi et al. reference.) Thus, the gas generant material (36, 86) is the gas generating agent for generating a high temperature gas as indicated in the Official Action and, on the other hand, the igniter material (60) is the agent for ignition and reaction of the gas generant material (36). It is obvious from the description at column 4, lines 43-59, of the Mossi et al. reference, that "[w]hen actuated, ignition of the igniter material 60 customarily results in an increase in pressure within the cup interior 74 with the subsequent predetermined rupturing or opening of the covering 80 to permit passage of ignition products produced by the combustion of the igniter material 60 through the exit orifices 76, from the igniter assembly 54 to the gas generant material 36 contained within the first chamber 34. The resulting contact by or between the ignition products and the gas generant material results in the ignition and reaction of the gas generant material, with gases so produced passing through the filter 42, rupturing the foil seal 46 and passing through the gas exit ports 24 (as signified by the arrows A) and out from the inflator assembly 10 into an associated airbag cushion (not shown)." The principle product of the ignition products produced by the ignition of the igniter material (60) is the flame. This flame fires the gas generant material. Therefore, the above-described indication of feature (60) as a gas generating material is incorrect.

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Additionally, it is noted that the Official Action indicates, “[t]herefore, the flowing direction of gas indicated by arrow B is considered to be around the center line of the squib 90, in other words, the flowing direction of gas is around the axis of the housing.” However, the constituent element of the present invention is not the spout direction of the gas generated from the gas generant material (86) as indicated in the Official Action, but rather the constituent element of the present invention is the spout direction of the flame. Therefore, this statement in the Official Action has no relationship with the claimed feature of the present invention.

In addition, to mention by way of precaution, the arrow shown in FIG. 3 of the Mossi et al. reference, shows the spouting direction of the gas. The arrows except for arrow B are toward the direction other than around the axis of the housing and, moreover, in the direction other than around the axis of the housing, there is not equipment for changing the direction of the gas to spout around the axis of the housing. Therefore, in the Mossi et al. reference, there is neither disclosure nor suggestion for the structure of the present invention.

Accordingly, the Applicants respectfully request the withdrawal of the anticipation rejection of Claims 7 and 8.

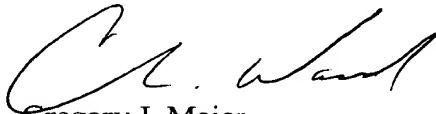
Claims 9-11 are considered allowable for the reasons advanced for Claim 8 from which they depend. These claims are further considered allowable as they recite other features of the invention that are neither disclosed, taught, nor suggested by the applied references when those features are considered within the context of Claim 8.

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Consequently, in view of the above discussion, it is respectfully submitted that the present application is in condition for formal allowance and an early and favorable reconsideration of this application is therefore requested.

Respectfully Submitted,

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